

### **REMARKS**

Upon entry of the foregoing amendments, claims 1-5, 8-15, 17-20, 24-26 and 35-36, are pending and under consideration. Claims 1, 15 and 19 have been amended. Support for this amendment may be found in the claims as originally filed, for example, in original claims 7, 16 and 23, as well as throughout the specification, for example at Example 1. Claims 6-7, 16, 21-23 and 29 are canceled and claims 27-28 and 30-34 have been previously withdrawn. Accordingly, no new matter has been added by the amendments filed herein.

In view of the following remarks, the Examiner is requested to withdraw the rejection and allow claims 1-5, 8-15, 17-20, 24-26 and 35-36, the only claims pending and currently under examination in this application after entry of the above amendments.

### **REJECTIONS UNDER 35 U.S.C. § 102**

***Claims 19 and 22-26 remain rejected under 35 U.S.C. § 102(b) as being anticipated by Uetani et al. (Uetani) (U.S. Patent Application Publication No. 2001/0026905)***

As amended, claim 19 is directed to a method of producing an adhesive composition having improved adhesive characteristics for use in bonding a ceramic material to a manufacturing tool, comprising adding a solvent to a novolac resin, wherein the solvent has a boiling point in the range of about 30° C to about 70° C, in a manner sufficient to produce said adhesive composition with improved adhesive characteristics, wherein the composition consists essentially of the novolac resin and the solvent.

In view of the above amendment, the methods now require an adhesive composition that consists essentially of a novolac resin and the solvent.

The MPEP 2111.03 describes the transitional phrase *consisting essentially of* as a phrase that "limits the scope of a claim to the specified materials or steps and those that do not materially affect the basic and novel characteristic(s)" of the claimed invention.

As such, an element of claim 19, and the claims dependent therefrom, is the production of an adhesive composition that does not require any additional components other than 1) a novolac resin; and 2) a solvent having a boiling point in the range of about 30° C to about 70° C.

This is further clarified in Example 1 of the instant specification which is reproduced below for the convenience of the Office.

Example 1

[0055] An adhesive composition was prepared by mixing about 60% by weight of a novolac resin (available under the trade designation Durite® PD-444A from Borden Chemical Inc. Louisville, Ky.), about 40% by weight of acetone (available from Ultra Pure Solutions Inc., semiconductor grade, Castroville, Calif.). After mixing to dissolve the novolac resin in the acetone, the solution was allowed to mix overnight with stirring at ambient room temperature.

[0056] The adhesive was subsequently dispensed onto the ABS side of a quad ceramic material through the use of a syringe dispenser and the quad bonded to a stainless steel slotted extender tool. The bonded quad was then placed in vacuum box at about -28 in. Hg for about 40 minutes to extract the acetone. Following extraction, the novolac adhesive was sufficiently hardened to allow row slicing of the bonded quad.

As evident from above, the adhesive composition of the present claims require two components: a novolac resin and a solvent. No other materials were added to the composition.

In continuing to maintain the rejection, the Office asserts that Uetani teaches “a resist composition comprising a novolac resin and adding a solvent thereto... the solvent consist of acetone” (P. 2 of the Final Office Action).

Applicants respectfully disagree. In order for a reference to anticipate a claim, the reference must teach each and every element of the claim (MPEP § 2131). As set forth below, Uetani is not anticipatory because the reference fails to teach a method of producing an adhesive composition in which the composition consists essentially of 1) a novolac resin; and 2) a solvent having a boiling point in the range of about 30° C to about 70° C as in present claim 19.

The compositions described in Uetani require an alkali-soluble ingredient which may be a novolac resin but also require the addition of a radiation-sensitive ingredient and a thioxanthone compound. According to Uetani’s disclosure:

*“As the result of researches, the present inventors have found that the resolution of a novolac-quinonediazide type positive resist composition, which comprises an alkali*

*soluble novolac resin and a radiation-sensitive quinonediazide compound, can be improved by adding a certain compound. Thus, the present invention was completed.”*  
[para: 006]

In view of the above amendment, Applicants submit that Uetani's composition, which not only requires a novolac resin but also the addition of a radiation sensitive quinonediazide compound and a thioxanthone compound, cannot be equated to the present claims. Therefore, Uetani does not teach every element of the rejected claims, namely, a method of producing an adhesive composition that consists essentially of 1) a novolac resin; and 2) a solvent having a boiling point in the range of about 30° C to about 70° C. Consequently, Uetani does not anticipate the claimed invention and this rejection may be withdrawn.

***Claims 19 and 22-26 remain rejected under 35 U.S.C. § 102(b) as being anticipated by Teiichi et al. (Teiichi) (WO 01/60938 with U.S. Patent Application Publication No. 2001/0026905 used as a translation)***

As set forth above, amended claim 19 is directed to a method of producing an adhesive composition having improved adhesive characteristics for use in bonding a ceramic material to a manufacturing tool, comprising adding a solvent to a novolac resin, wherein the solvent has a boiling point in the range of about 30° C to about 70° C, in a manner sufficient to produce said adhesive composition with improved adhesive characteristics, wherein the composition consists essentially of the novolac resin and the solvent.

In continuing to maintain the rejection, the Office asserts that Teiichi teaches “an epoxy adhesive resin and adding a solvent thereto... the solvent consist of acetone” (P. 3 of the Final Office Action).

Applicants respectfully disagree. As set forth below, Teiichi is not anticipatory because the reference fails to teach methods of producing an adhesive composition in which the composition consists essentially of 1) a novolac resin; and 2) a solvent having a boiling point in the range of about 30° C to about 70° C as in present claim 19.

The compositions described in Teiichi recite an epoxy resin which may be a novolac resin but also requires the addition of a curing agent, a filler, and a polymer compound incompatible with the epoxy resin. According to Teiichi's disclosure:

*"The process for producing an adhesive composition of the present invention is characterized in that it comprises mixing (a) an epoxy resin with (b) a curing agent and (d) a filler, and then, mixing the resultant mixture with (c) a polymer compound incompatible with the epoxy resin." [para: 021]*

Applicants submit that Teiichi's composition, which not only requires an epoxy resin e.g., a novolac resin, but also requires the addition of a curing agent, filler and a polymer compound incompatible with the epoxy resin, cannot be equated to the present claims. Therefore, Teiichi does not teach every element of the rejected claims, namely, a method of producing an adhesive composition in which the composition consists essentially of 1) a novolac resin; and 2) a solvent having a boiling point in the range of about 30° C to about 70° C. Consequently, Teiichi does not anticipate the claimed invention and this rejection may be withdrawn.

**REJECTIONS UNDER 35 U.S.C. § 103(a)**

***Claims 15-20 and 22-26 remain rejected under 35 U.S.C. § 103(a) as being unpatentable over Ruiz (Ruiz) (U.S. Patent No. 5,406,694) in view of Teiichi et al. (Teiichi) (WO 01/60938 with U.S. Patent Application Publication No. 2001/0026905 used as a translation)***

Ruiz is directed to methods of fabricating thin-film magnetic recording heads, or sliders, which employ the step of slicing a wafer containing like-oriented transducers into chunks.

In maintaining this rejection, the Office acknowledges that Ruiz is deficient in that it does not disclose the use of an adhesive that includes a solvent, in the first place, let alone a solvent that is debondable and includes a boiling point in the range of about 30° C to about 70° C. The Office, therefore, relies on Teiichi to remedy this deficiency. Specifically, the Office asserts that it would be obvious to use the adhesive disclosed in Teiichi in the process disclosed in Ruiz.

The Applicants respectfully disagree. As amended, claim 15 now recites a method of manufacturing a slider for a hard disk drive, wherein the adhesive is used to bond a ceramic material to a manufacturing tool, the improvement which comprises employing a de-bondable adhesive composition consisting essentially of a novolac resin and a solvent, wherein the solvent has a boiling point in the range of about 30°C to about 70°C.

As such, similar to claim 19 discussed above, the adhesive composition recited in the methods consists essentially of 1) a novolac resin; and 2) a solvent having a boiling point in the

range of about 30° C to about 70° C. Therefore, Applicants submit that Teiichi's composition, which not only requires an epoxy resin, e.g., a novolac resin, but also requires the addition of a curing agent, filler and a polymer compound incompatible with the epoxy resin, cannot be equated to the present claims. Therefore, Teiichi does not teach or suggest every element of the rejected claims, namely, an adhesive composition that consists essentially of 1) a novolac resin; and 2) a solvent having a boiling point in the range of about 30° C to about 70° C.

The M.P.E.P. § 2143 provides clear guidance on the requirements which must be articulated by an Examiner to establish a *prima facie* case of obviousness. Firstly, the Examiner must articulate a finding that all of the claimed elements were known in the prior art. Second, that one skilled in the art could have combined the elements as claimed by known methods with no change in their respective functions, and thirdly, that the combination yielded nothing more than predictable results to one of ordinary skill in the art.

However, if any of these findings cannot be made, then this rationale cannot be used to support a conclusion that the claim would have been obvious to one of ordinary skill in the art (*MPEP Id.*).

As set forth below, Applicants submit that a *prima facie* case of obviousness has not been established because Teiichi does not teach or suggest every element of the rejected claims, namely, an adhesive composition that consists essentially of 1) a novolac resin; and 2) a solvent having a boiling point in the range of about 30° C to about 70° C.

Therefore, because Teiichi does not teach or suggest the element of an adhesive composition as specified in claim 15, the reference provides no suggestion or motivation to one of skill in the art to modify Teiichi's composition to arrive at the Applicants adhesive composition.

Further, although Teiichi provides exemplary data directed to various adhesive compositions, each composition specifically includes an epoxy resin, e.g., a novolac resin as well as the addition of a curing agent, filler and a polymer compound incompatible with the epoxy resin.

Therefore, in contrast to the present application, Teiichi fails to provide any working examples of an adhesive composition that consists essentially of 1) a novolac resin; and 2) a solvent having a boiling point in the range of about 30° C to about 70° C as in the Applicants

disclosure. Thus, Applicants submit that Teiichi fails to provide the skilled artisan with a reasonable expectation that a composition as in claim 15 of the present application would be successful as an adhesive composition for manufacturing a slider. As such, outside of the Applicants' teachings, one of skill in the art would not reasonably expect that modifying Teiichi's composition to arrive at the adhesive composition of claim 15 would be a successful adhesive composition for manufacturing a slider.

Therefore, Teiichi provides no guidance for one of ordinary skill in the art to modify the teachings to include an adhesive composition that consists essentially of 1) a novolac resin; and 2) a solvent having a boiling point in the range of about 30° C to about 70° C as in the Applicants disclosure.

In view of the foregoing, Teiichi fails to make up for the deficiency of Ruiz. Therefore, in view of the above, a *prima facie* case of obviousness has not been established because Ruiz in combination with Teiichi's composition fails to teach or suggest each and every element of the instant invention, namely, the step of employing a de-bondable adhesive composition that consists essentially of 1) a novolac resin; and 2) a solvent having a boiling point in the range of about 30° C to about 70° C in the manufacture of a slider for a hard disk drive. Accordingly, a *prima facie* case of obviousness has not been provided and this rejection may be withdrawn.

***Claims 1-5, 7-10 and 12-14 remain rejected under 35 U.S.C. § 103(a) as being unpatentable over Ruiz (Ruiz) (U.S. Patent No. 5,406,694) and Teiichi et al. (WO 01/60938 with U.S. Patent Application Publication No. 2001/0026905 used as a translation) as applied to claims 15-20 and 22-26 above, and further in view of Tanaka et al. (U.S. Patent No. 4,376,194)***

As amended, claim 1 now recites a method of bonding a ceramic material to a manufacturing tool comprising providing a de-bondable adhesive composition consisting essentially of a novolac resin and a solvent, wherein the solvent has a boiling point in the range of about 30°C to about 80°C; placing the adhesive composition onto a surface of the ceramic material; and contacting the manufacturing tool with the adhesive composition on the surface of the ceramic material such that the tool and the ceramic material bond together; and subjecting the adhesive composition located between the tool and the ceramic material to conditions effective to substantially remove the solvent from the adhesive.

As such, similar to claims 19 and 15 discussed above, the adhesive composition recited in the methods of claim 1 consists essentially of 1) a novolac resin; and 2) a solvent having a boiling point in the range of about 30° C to about 70° C. Therefore, Applicants submit that independent claim 1 and the claims dependent thereon are patentable over Ruiz and Teiichi as discussed above with respect to claim 15.

As the Office cites Tanaka solely for reciting the steps of applying the adhesive to a first composition and then to a second composition and then subjecting the adhesive to conditions effective for removing the solvent, Tanaka fails to make up for the deficiency of Ruiz and Teiichi. Accordingly, a *prima facie* case of obviousness has not been established and this rejection may be withdrawn.

***Claim 11 has been rejected under 35 U.S.C. § 103(a) as being unpatentable over Ruiz (Ruiz) (U.S. Patent No. 5,406,694) and Teiichi et al. (Teiichi) (WO 01/60938 with U.S. Patent Application Publication No. 2001/0026905 used as a translation) and Tanaka et al. (Tanaka) (U.S. Patent No. 4,376,194) as applied to claims 1-5, 7-10 and 12-14 above, and further in view of Schafer (Schafer) (U.S. Patent No. 5,421,884)***

Claim 11 ultimately depends from independent claim 1. Accordingly, claim 11 includes all of the elements recited in independent claim 1 and is therefore patentable over Ruiz, Teiichi and Tanaka for at least the reasons discussed above. Specifically, none of the references, alone or in combination, recite a method of producing an adhesive composition that consists essentially of 1) a novolac resin; and 2) a solvent having a boiling point in the range of about 30° C to about 70° C.

As the Office cites Schafer for disclosing a technique for removing solvent from an adhesive by applying vacuum and heat conditions, Schafer fails to make up for the deficiency of Ruiz, Teiichi and Tanaka. Therefore, a *prima facie* case of obviousness has not been established and this rejection may be withdrawn.

***Claims 1-5, 6, 8, 9, 12-15 and 17 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Ruiz (Ruiz) (U.S. Patent No. 5,406,694) in view of Asami et al. (Asami) (JP 60221476) and Tanaka et al. (Tanaka) (U.S. Patent No. 4,376,194)***

Independent claim 1 is directed to methods of bonding a ceramic material to a manufacturing tool in which the adhesive composition consists essentially of 1) a novolac resin; and 2) a solvent having a boiling point in the range of about 30° C to about 70° C.

As previously discussed above, Ruiz is directed towards methods of fabricating thin-film magnetic recording heads or sliders which employ the step of slicing a wafer containing like-oriented transducers into chunks. In addition, the Office has previously acknowledges that Ruiz is deficient in that it does not disclose the use of an adhesive that includes a solvent, in the first place, let alone a solvent that is debondable and includes a boiling point in the range of about 30° C to about 70° C. The Office, therefore, relies on Asami to remedy this deficiency. Specifically, the Office asserts that it would be obvious to use the adhesive disclosed in Asami in the process disclosed in Ruiz (P.9, Final Office Action).

Asami describes a bonding composition containing a graft copolymer-

*“obtained by reacting a cyclic ester, e.g., propilactone or beta butyrolactone, in the presence of at least one of a cellulosic derivative containing 20 wt% hydroxyld groups in the molecule, e.g., cellulose acetate or ethyl cellulose and a catalyst and dissolving the resultant graft copolymer in an organic solvent.” (Abstract)*

As such, Applicants submit that Asami’s composition, which requires a cyclic ester, a cellulosic derivivate as well as a solvent, cannot be equated to the present claims. Therefore, Asami does not teach each and every element of the rejected claims, namely, an adhesive composition that consists essentially of 1) a novolac resin; and 2) a solvent having a boiling point in the range of about 30° C to about 70° C.

Therefore, because Asami does not teach or suggest the element of an adhesive composition as specified in claim 1, the reference provides no suggestion or motivation to one of skill in the art to modify Asami’s composition to arrive at the Applicants adhesive composition.



Further, as only the Japanese abstract has been cited, the Office has not pointed out any exemplary data directed to Asami's adhesive compositions. Therefore, in contrast to the present application, Asami fails to provide any working examples of an adhesive composition that consists essentially of 1) a novolac resin; and 2) a solvent having a boiling point in the range of about 30° C to about 70° C as in the Applicants disclosure.

Thus, Applicants submit that Asami fails to provide the skilled artisan with a reasonable expectation that a composition as in claim 1 of the present application would be successful as an adhesive composition for bonding a ceramic material to a manufacturing tool. As such, outside of the Applicants' teachings, one of skill in the art would not reasonably expect that modifying Asami's composition to arrive at the adhesive composition of claim 1 would be a successful adhesive composition for bonding a ceramic material to a manufacturing tool.

Therefore, Asami provides no guidance for one of ordinary skill in the art to modify the teachings to include an adhesive composition that consists essentially of 1) a novolac resin; and 2) a solvent having a boiling point in the range of about 30° C to about 70° C as in the Applicants disclosure.

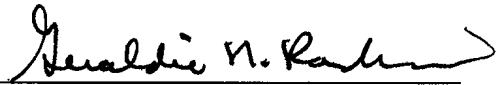
In view of the foregoing, Asami fails to make up for the deficiency of Ruiz. As the Office cites Tanaka solely for reciting the steps of applying the adhesive to a first composition and then to a second composition and then subjecting the adhesive to conditions effective for removing the solvent, Tanaka fails to make up for the deficiency of Ruiz and Asami.

Therefore, in view of the above, a *prima facie* case of obviousness has not been established because Ruiz in combination with Asami's composition and further in view of Tanaka fails to teach or suggest each and every element of the instant invention, namely, the step of employing a de-bondable adhesive composition that consists essentially of 1) a novolac resin; and 2) a solvent having a boiling point in the range of about 30° C to about 70° C in a method of bonding a ceramic material to a manufacturing tool. Accordingly, a *prima facie* case of obviousness has not been provided and this rejection may be withdrawn.

## CONCLUSION

Applicants respectfully submit that the application is in condition for allowance and request an allowance for same. Please charge any fees due or credit any overpayment to the undersigned's Deposit Account No. 18-0580, Reference No. HSJ9-2003-218-US1.

Respectfully submitted,

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